



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,708	08/16/2001	Wolfgang Reik	3191/OJ589	3002

7590 09/16/2003
Darby & Darby P.C.
805 Third Avenue
New York, NY 10022

EXAMINER

WILLIAMS, ERIC M

ART UNIT	PAPER NUMBER
----------	--------------

3681

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,708

Applicant(s)

REIK ET AL.

Examiner

Eric M Williams

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-18 and 20-50 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 11, 12, 28-31 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 14-18, 20-27, 32-35 and 37-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05-30-2003 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 7-10, 14-18, 20-27, 32-35, and 37-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, the explanation of the means for coupling the housing with the cylinder and its recited function of not requiring extensive disassembly of the driven unit when the prime mover and the driven unit are separated, was not described in the written description to convey the Applicant had possession of the claimed invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 7-10, 14-18, 20-27, 32-35, and 37-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 42 are indefinite because it is unclear what is meant by the means for *reversibly* coupling the cylinder with the housing, thereby rendering the scope of the claims unascertainable.

Claims 1 and 42 are further indefinite because it is unclear what the recitation of *extensive* disassembly is intended to encompass thereby further rendering the scope of the claim unascertainable.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 7-10, 16-18, 20-22, 26, 27, 38-43, 46, 48-50, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Checa Patent No. 5,205,387. The following reproduced claims set forth the corresponding structure of Checa ('387).

1. A power train (Fig.1), comprising:

an output member (20) rotatable about a predetermined axis;

a rotary input member (31); and means for transmitting torque between said input and output members (Fig.1), including an engageable and disengageable friction clutch (Fig.1) having a housing (21, 28) rotatable with said output member about said axis, a rotary clutch disc (26) arranged to rotate with said input member, and means for selectively coupling said clutch disc to said housing (Fig. 1), including at least one cylinder and piston unit (51, 52) having at least one cylinder (51) mounted on said housing so that it is axially fixed while being rotatable with reference to the housing; and means for reversibly and separably coupling the at least one cylinder with the housing (70 and 71 separably couple the cylinder 51 with the housing) within the confines of the clutch space so that only the friction clutch has to be maneuvered off the rotary input member for separating the prime mover from the driven unit without requiring extensive disassembly of the driven unit (the means for separably coupling the cylinder with the housing is 70, 71 and it is within the confines of the clutch space. Also, the separation of the prime mover from the driven unit would not require disassembly of the driven unit.)

2. The power train of claim 1, wherein said at least one cylinder is rotatable about said predetermined axis (Fig. 1 as best understood).

3. The power train of claim 1, wherein said at least one unit further comprises an annular piston (52) reciprocable in said at least one cylinder.

7. The power train of claim 1, wherein said at least one cylinder (51) is coaxial with said housing and is rotatable relative to said housing about said axis (Fig. 1), said torque

Art Unit: 3681

transmitting means further including an antifriction bearing (1b) interposed between said housing and said at least one cylinder.

8. The power train of claim 1, further comprising

a first bearing interposed between said housing and said at least one cylinder (1b), said at least one unit further comprising a piston (52) reciprocable in said at least one cylinder and a second bearing (1a) interposed between said piston and a resilient element (23) of said clutch, said resilient element being arranged to bias a pressure plate (24) of said clutch against said clutch disc in the engaged condition of said clutch.

9. The power train of claim 8, wherein said bearings spacedly surround said axis, said first bearing being disposed at a first radial distance from said axis and said second bearing being disposed at a second radial distance from said axis (Fig. 1).

10. The power train of claim 9, wherein said first distance at least approximates said second distance (Fig. 1).

16. The power train of claim 1, wherein said housing (22) includes an annular portion nearest to and surrounding said axis, said means for selectively coupling further including a bearing (1b) centered by said annular portion.

17. The power train of claim 16, wherein an intermediate ring surrounds said bearing and includes a feature for holding the bearing in an axially fixed position relative to the housing (71 and 70 hold the bearing axially and 71 is an intermediate ring surrounding the bearing).

18. The power train of claim 1, wherein said housing of said clutch includes a flywheel (21) and a cover (22) having a radially outer portion remote from said axis and affixed to

said flywheel and a radially inner portion adjacent to but spaced apart from and surrounding said axis (Fig. 1), said clutch further having at least one component (30) disposed in said housing between said flywheel and said cover as seen in the direction of said axis.

20. The power train of claim 1, further comprising an antifriction bearing (1b) between said at least one cylinder and said housing, and means for separably coupling said bearing with said housing of said friction clutch (70 and 71).

21. The power train of claim 20, wherein said bearing has an outer race (Fig. 1 not labeled) and said coupling means (70 and 71) is arranged to separably connect said housing with said-outer race

22. The power train of claim 20, wherein said coupling means is selected from the group consisting of a bayonet lock, a snap fastener and a detent (70 and 71).

26. The power train of claim 1, further comprising at least one fixed component (2), said at least one cylinder (51) being arranged to bear upon said at least one fixed component while receiving torque from one of said input and output members.

27. The power train of claim 26, further comprising a variable-speed transmission having an input shaft including said rotary input member, said transmission further comprising a stationary case and said fixed component forming part of said case (Fig.1 and Specification).

38. The power train of claim 37, wherein said input member forms part of a change-speed transmission (Fig. 1 and Specification).

39. The power train of claim 1, further comprising a pilot bearing (Fig. 1 not labeled) between a prime mover including said output member and said clutch.

40. The power train of claim 1, further comprising a pilot bearing between a prime mover including said output member and a driven assembly including said input member (Fig. 1).

41. The power train of claim 1, further comprising a pilot bearing rotatably journalling one of said input and output members in the other of said input and output members (Fig. 1).

42. A power train, comprising: a prime mover having an output member (20) rotatable about a predetermined axis; a driven unit including a rotary input member (31) coaxial with said output member; and an engageable and disengageable friction clutch arranged to transmit torque between said input and output members and including a housing (21, 22) rotatable with said output member about said axis, a clutch disc (26) disposed in said housing and affixed to said input member, a pressure plate (24) movable in the direction of said axis and arranged to rotate with and disposed in said housing, an energy storing device (23) disposed in said housing and operable to bias said pressure plate against said clutch disc to thus engage the clutch and establish a torque transmitting connection between said input and output members, and means for engaging said clutch including an actor (52) rotatable with and axially fixed relative to said housing, said actor including means for moving said energy storing device relative to said housing (30 and 4), and means for separably coupling the actor with the housing (70 and 71 separably couple the actor with the housing), within the confines of the

Art Unit: 3681

clutch space so that only the friction clutch has to be maneuvered off the rotary input member for separating the prime mover from the driven unit without requiring extensive disassembly of the driven unit (the means for separably coupling the cylinder with the housing is 70, 71 and it is within the confines of the clutch space. Also, the separation of the prime mover from the driven unit would not require disassembly of the driven unit.)

43. The power train of claim 42, wherein said clutch engaging means further includes a bearing (1a) interposed between said actor and said energy storing device.

46. The power train of claim 45, wherein said actor is coaxial with said input and output members-(52).

48. The power train of claim 42, wherein said prime mover is the engine of a motor vehicle and said driven unit further includes a change-speed transmission (Fig. 1 and Specification).

49. The power train of claim 42, wherein said clutch disc includes friction linings (27) engageable by said pressure plate and a torsional vibration damper (25) between said friction linings and said input member.

50. The power train of claim 42, wherein said energy storing device includes a diaphragm spring (23) and said clutch further comprises a counterpressure plate forming part of said housing (21), said clutch disc being disposed between said pressure plate and said counterpressure plate as seen in the direction of said axis (Fig. 1).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 14 and 15, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Checa '387 in view of Feigler ('233).

Checa lacks any specific teaching of a portion of the housing consisting of sheet metal from a blank. Feigler '233 discloses a clutch with at least a portion of the housing made of sheet metal from a blank (column 4 lines 64-69). It would have been obvious to one of ordinary skill in the art at the time of this invention to modify Checa's clutch such that the housing is made of a sheet metal blank, in view of '233, to simplify the manufacturing process.

10. Claims 23-25, and 33, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Checa ('387) in view of Babcock Patent No. ('492).

Checa does not specifically disclose a portion of the cylinder made of a one-piece, injection molded, plastic material. Babcock '492 discloses a clutch with a one-piece, plastic, injection molded cylinder. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Checa such that the clutch had a cylinder made of a one-piece, injection molded, plastic material, in view of Babcock '492, to simplify the manufacturing process and reduce the weight of the clutch. It also would have been obvious to one of ordinary skill in the art at the time of the invention to

modify Checa such that the clutch was a push type clutch, in view of Babcock '492, to reduce the length of the cylinder and piston unit to reduce manufacturing cost.

11. Claims 32 and 47, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Checa ('387) in view of Reik et al. ('901).

Checa does not specifically disclose means for compensating for wear. Reik et al. '901 discloses a clutch with a wear compensator, therefore, it would have been obvious to one of ordinary skill in the art at the time of this invention to modify Checa such that it included a wear compensator, in view of Reik, to compensate for the wear of the friction discs.

12. Claims 34, 35, 44 and 45, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Checa ('387) in view of Albers et al. ('091).

Checa '387 does not specifically disclose means for automatically supplying fluid to the at least one unit including a master cylinder, and an electrically or mechanically operated actor. Albers et al. '091 discloses an apparatus for operating clutches in motor vehicles with a master cylinder automatically supplying fluid to the at least one cylinder with an electrically and mechanically operated actor. It would have been obvious to one of ordinary skill in the art at the time of this invention to modify Checa such that the clutch included means for automatically supplying fluid including a master cylinder, in view of Albers '091, to regulate and automatically control the operation of the clutch.

13. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Checa ('387) in view of Jackel et al. Patent No. ('314).

Checa does not specifically disclose means for separably connecting the housing to the output member such that the clutch disc can stay coupled to the input member prior, during and upon separation of the housing. Jackel '314 discloses a clutch (Fig. 3) with a means for separably coupling the housing to the output members such that the clutch disc stays connected to the input member prior, during and upon separation of the housing. It would have been obvious to one of ordinary skill in the art at the time of this invention to modify Checa such that the clutch disc with means for separably coupling the housing to the input member, in view of Jackel '314, so that the clutch components were more easily accessible.

Response to Arguments

14. Applicant's arguments filed 05-30-2003 have been fully considered but they are not persuasive.

Applicant argues the release device of Checa is not separable in the same manner as the device claimed by applicant. However, the Checa reference discloses a means for separably coupling that meets the recited limitations as set forth in Applicant's claims. In the Checa reference, the means for separably coupling the housing to the cylinder (70, 71) is within the confines of a clutch space, even during a separation of the driven unit and the prime mover. There is also no reason to believe the separation of the housing from the release device in Checa requires extensive disassembly of the driven unit when separating the prime mover from the driven unit.

Art Unit: 3681

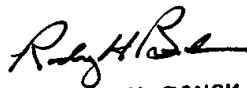
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M Williams whose telephone number is 703-305-0607. The examiner can normally be reached on Mon. - Fri. from 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.



EMW



RODNEY H. BONCK
PRIMARY EXAMINER
ART UNIT 3681